

The functional state of the sympathoadrenal system and the autonomic regulation of the cardiac rhythm in younger schoolchildren

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Abstract

A comparative analysis of functional states of the sympathoadrenal system (SAS) and its reactions to isometric muscular effort was performed in seven-year-old schoolchildren of both sexes with different types of cardiac regulation. Children with a predominance of sympathetic influences displayed a higher excretion of noradrenaline and a lower excretion of dopamine than their counterparts with normal or vagal tone. A graded isometric exercise changed the functional state of the SAS in a manner dependent on the initial autonomic tone, baseline excretion of catecholamines, and sex. Boys displayed more strained reactions of the SAS than girls did, which was associated with a decrease in its reserve potential, especially pronounced in the states of vagal and normal tones. This suggests imperfect mechanisms of adaptation to static loads. © Pleiades Publishing, Inc. 2006.

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